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MRT news

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JOM NAIK MRT!

IN SERVICE: An MRT train running along the elevated MRT Sungai Buloh-Kajang Line guideway after Phase One operations began on 16 December 2016. See story on page 3.

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MRTMalaysia



from the desk of the CEO
DATO' SRI SHAHRIL MOKHTAR

HISTORY IS MADE

THE year 2016 has ended in the most amazing manner for all of us in Mass Rapid Transit Corporation Sdn Bhd (MRT Corp).

On 15 December 2016, Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak officially launched the operations for Phase One of the MRT Sungai Buloh-Kajang (SBK) Line. The following day, on 16 December 2016, the *rakyat* got the chance to ride on Malaysia's first MRT system.

No words could describe how I felt on both days - when I stood with the Prime Minister as he launched the system and took a ride on the train together with all the guest present at the ceremony, as well as when I saw the smiling faces of Malaysians from all walks of life when they first stepped into our spacious, bright and modern trains the following day.

And I can confidently say that this feeling was shared by every single staff member of MRT Corp, MMC Gamuda KVMRT (PDP) Sdn Bhd which is the Project Delivery Partner, and all others who were directly or indirectly involved in the project.

Indeed, we at MRT Corp are extremely proud of the results of the past five years of hard work. All the effort has created a beautiful piece of infrastructure.

At present, 12 stations of Phase One of the SBK Line which covers the northern elevated section of the line have opened their doors to the public.

This section serves areas such as Sungai Buloh, Kota Damansara, Mutiara Damansara, Bandar Utama, Taman Tun Dr Ismail, Damansara Utama and the northern parts of Petaling Jaya and Bukit Damansara.

As it does not go into the city centre yet, ridership of Phase One of the line will not be very high. This is expected to change once Phase Two, covering the underground and southern elevated sections of the line, begins operations after July 2017.

On the same day the trains started operations, a fleet of MRT SBK Line feeder buses also began running,

serving a total of 26 routes from 11 stations. These serve to provide the first and final mile connectivity for the rail-based public transport network to enable door-to-door travel via public transport.

The launch of Phase One of the SBK Line was not the only major event that we had during the second half of the year. On 15 September 2016, the Klang Valley MRT Project marked another major milestone with the ground breaking ceremony for the MRT Sungai Buloh-Serdang-Putrajaya (SSP) Line.

Since then, construction work has progressed at a good pace at various locations such as in Damansara Damai, Sri Damansara, Kepong, Jinjang, Sentul, Titiwangsa, Bandar Malaysia, Serdang and Putrajaya.

Slowly but surely, the second line of the Klang Valley MRT Project's is starting to take shape.

The year 2017 will be a busy one for us. Until July, we will have our hands full with the final works for the SBK Line. Learning from the operationalisation of Phase One, our engineers are making sure that the trains and other systems for Phase Two will be smooth when they start running.

At the same time, construction of the SSP Line will start to pick up, with all work packages starting construction work, including tunnelling works for the underground section.

The start of the SBK Line Phase One operations has given us all an important boost of confidence to ensure that the entire SBK Line will be delivered on time in July 2017, and to complete the SSP Line in 2022.

Thank you.

Shahril



DID YOU
KNOW
THAT ...

THIS station signboard is the only visible remnant of the first railway line in Malaysia that was opened in 1885 between Taiping and Port Weld, a distance of 13.6km. The tracks for the line and other structures have unfortunately been removed.



Source: Tina Lim, Flickr

MRT SUNGAI BULOH-KAJANG LINE BEGINS OPERATIONS

By Amalina Ghazali



GOOD RIDE: *Najib beaming as he took a ride on the MRT train during the launch ceremony, with Liow looking from behind. Picture by najibrazak.com*

AFTER five years of construction, 12 stations along the northern elevated section of the MRT Sungai Buloh-Kajang (SBK) Line opened its doors to the public for the first time at 6:00 am on 16 December 2016.

The 12 stations under Phase One operations of the SBK Line were (from the north) Sungai Buloh, Kampung Selamat, Kwasa Damansara, Kwasa Sentral, Kota Damansara, Surian, Mutiara Damansara, Bandar Utama, Taman Tun Dr Ismail, Phileo Damansara, Pusat Bandar Damansara and Semantan.

A total of 24 train sets, each capable of carrying 1,200 passengers, were put into service. During peak hours, the trains run at a frequency of 3.3 minutes.

Phase One operations, involving 21km out of the total 51km of the SBK Line, began after a launching ceremony by Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak which took place the day before.

The event which took place at the Kwasa Damansara Station was attended by some 800 guests from various organisations that had directly or indirectly contributed in making the Project a success.

Present at the historical event were Minister of Transport Dato' Sri Liow Tiong Lai, Minister of Finance II Datuk Johari Abdul Ghani, Minister in the Prime Minister's Department Dato' Seri Nancy Shukri and Suruhanjaya Pengangkutan Awam Darat Chairman Tan Sri Dato' Seri Dr Syed Hamid Albar.

Also present were the Board of Directors, Senior Leadership Team and staff of MRT Corp, senior management of MMC Gamuda KVMRT (PDP) Sdn Bhd the project delivery partner of the SBK Line, and the senior management of Prasarana Malaysia Bhd.

A beaming Najib, who arrived at about 3.00pm, said he was proud that Malaysians would now be able to enjoy the most modern rail service in the country.

"We have gone through a lot and overcame many challenges to make this project a success. What was regarded as a dream has now come true," he said during his speech at the event.

The Prime Minister also said that Rapid Rail was more than ready to take on the role of operator of the MRT service and expressed his faith that they would be able to deliver an efficient, safe and reliable MRT service for the *rakyat*.

"This is based on their vast experience in operating the LRT, Monorail, buses in the Klang Valley and other parts of the country, and even rail services overseas such as the Mecca Metro Rail," he said.

The Prime Minister also announced that all rides on the MRT and the feeder buses would be free from the operations commencement date until 16 January 2017.

To symbolize the launch of operations, the Prime Minister was invited to place his palm on a TV screen, which triggered a video of the train journey along the entire Phase One of the SBK Line to come on, showing all the stations and the places of interest near the stations highlighted.

The Prime Minister also took the opportunity to hand over certificates of participation to the 14 retailers for being part of the MRT Retail Programme. The retailers will be opening outlets in 21 elevated stations of the SBK Line.

Later, the Prime Minister together with Sirim Bhd Chairman Tan Sri Dr Ahmad Tajuddin Ali witnessed the conferring of the ISO9001:2015 certification to MRT Corp, making it the first railway construction or development-related organisation in Malaysia to achieve this certification.



JOYOUS MOMENT: *Najib having a laugh with the VIPs and passengers on the MRT train. Picture by najibrazak.com*



HISTORIC: *Najib delivering his speech during the SBK Line Phase One Launch Ceremony.*

The certificate was presented by Sirim Managing Director Encik Mohd Azanuddin Salleh to MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar.

Just before the official event ended, the Prime Minister went to the microphone and invited everyone present at the event to take a ride on the train with him.

"*Jom naik MRT* (Let's get on the MRT)," he told the crowd, and was greeted with cheers and a huge applause.

The full train then travelled from the Kwasa Damansara Station to the Sungai Buloh MRT Station, where everyone then transferred to another train and came back to Kwasa Damansara.

The guests were then free to take rides on the train along the line to experience the SBK Line for themselves for the rest of the evening.



SOUVENIR: *Najib holds up a scaled model of the SBK Line MRT train which he received as a memento for the event.*



SLEEK: *View inside the MRT train which has four cars and can carry up to 1,200 passengers.*



UNIVERSAL ACCESS: *Najib having a chat with Vice President of Persatuan Mobiliti Selangor dan Kuala Lumpur Mr Anthony Arokiah inside the train while Liow looks on. Picture by najibrazak.com*



TAPPING OUT: *Passengers exiting the fare gates after their train ride.*



WELCOME: *A Rapid Rail staff greeting a user as she walks through the fare gates. Rapid Rail is the operator of the SBK line.*

GETTING READY FOR THE RUN

by Nik Haizan Nik Zambri



■ **SMOOTH RUNNING:** An MRT train being tested on the actual tracks near Kwasa Sentral Station.



■ **QUICK SPRINT:** A train on the 2km-long test track in the Sungai Buloh Depot.

In the second of a two-part series, we take a look at how our trains are being checked and tested to ensure that they are ready for operations come December 2016.

AS the date for Phase One operations of the MRT Sungai Buloh-Kajang (SBK) Line drew near, focus on the project moved from construction and installation to testing and commissioning.

This stage of works, which saw all electrical and mechanical systems as well as building services being tested both individually as well as an integrated system, would ensure that everything would work properly when the line was opened to the public.

This would be the time to test whether the design concept during the planning and construction phase worked accordingly, including the many interfaces with various different systems.

One of the most important electrical and mechanical system item of the Sungai Buloh-Serdang-Putrajaya (SSP) Line is that of the electric trains. Testing and commissioning for the electric trains is a tedious and complicated affair, requiring several stages before they can be deemed fit for operations.

The electric trains of the SBK Line were supplied by a consortium comprising Siemens AG of Germany, Siemens Malaysia Sdn Bhd and SMH Rail Sdn Bhd.

The trains were the first MRT trains to be completely assembled in Malaysia by SMH Rail in its train assembly plant in Rasa, Hulu Selangor. The components for the train came from various parts of the world, such as the bogies from



■ **METICULOUS:** Engineers monitoring tests at the console of a train in the Sungai Buloh Depot.

Austria, train car body from China, seats and LED lighting from Malacca.

Once the assembly process was completed, the trains were transported – car by car – to the Sungai Buloh MRT Depot. Each train set comprised four cars and all 58 trains that would be used for the SBK Line would be stored at the depot.

Upon arrival at the depot, a Post Delivery Inspection (PDI) would first be carried out. The PDI is a general inspection to make sure that the train couplers were working well when the four cars were installed back together accordingly.

Once the PDI was completed, the Partial Acceptance Test (PAT) would be done. The PAT in fact comprised two parts – static and dynamic tests.

The static test was in fact done at the train assembly plant in Rasa to ensure that the train parts, equipment and wiring were installed and connected properly. For instance, tests would be done to make sure that the train doors and electrical continuity were working perfectly.

The dynamic test on the other hand was conducted on the test track at the depot. During this stage, various test including the main circuit and sub-systems test would take place.

An obstacle deflector – a device installed to detect any object more than 5kg on the track – was also installed and tested. When this safety feature is triggered, the train would automatically stop to avoid further damage and would notify the Operation Control Centre (OCC).



■ **TESTING IN PROGRESS:** Personnel from Siemens AG at an open console of a train which is undergoing testing. Picture courtesy of Siemens AG.

The trains would also go through stability and suspension tests at this stage. Parts like the air-conditioner system and event recorder (closed circuit television camera) would also be tested. Next would be the System Acceptance Test (SAT). At this stage, all equipment and sub-systems were tested on the actual tracks.

The testing and commissioning team has an Operations Item List (OIL) that would be checked to ensure that the trains were working accordingly. The test also ensured that the various equipment and sub-systems were able to function perfectly to fulfil performance requirements.

There were two specific tests that were conducted during this stage – the type test and the routine test.

For the type test, one train would be selected to run along the alignment for 3,000km without having any problems occurring. If a problem occurred, the mileage would be set back to zero and the test would be restarted.

For the routine test, all the other trains would have to log in 1,500km of fault-free running along the MRT tracks. Again, if any problems arose, the mileage would be set back to zero. The system cannot be licensed and opened to the public if the number of trains required for service failed to pass these tests.

Other tests which were carried out included the traction and braking of the trains to ensure smooth acceleration and stopping. Here, the trains were loaded with 231.65 tonnes of sandbags to test the maximum load when the trains were at a maximum capacity of 1,200 passengers per train, with 4 persons per square



■ **CAREFUL CHECKS:** An engineer carrying out checks on the cabling and ducting on the underside of the train in the Sungai Buloh Depot. Picture courtesy of Siemens AG.

foot. Next came the interface tests, with its 234 individual tests involving three parties - the electric train team, signalling team and the communications team. All parties worked closely together to ensure all systems are integrated and receptive to one another.

This was followed by the Systems Integration Tests (SIT), which consisted of 25 different tests. This test mimicked the actual operations. Just like during actual operations, the trains would have to start automatically at 5.30am in the morning. The trains would go through the automatic train wash before it started its service for the public.

Another vital test was the radio coverage test. This would ensure better communications between trains and operations control centre (OCC). As the trains were driverless, train movement would be controlled from the OCC.

The test also ensured that commuters were able to use their mobile devices when traveling, especially when the train went underground.

Trial operations tests ran for three months prior to opening to the public. Testing and commissioning are a critical part of the construction of an MRT project, requiring all parties to work together to overcome issues which will surface during this period.

Although it is an impossibility for glitches to be totally avoided, sufficient testing and commissioning will ensure that operational problems can be minimised once the system is opened to the public.

ALL ABOARD THE MRT

By Rizal Redzuan

THE Board of Directors of Mass Rapid Transit Corporation Sdn Bhd (MRT Corp), led by Chairman Tan Sri Dr Ali Hamsa, took a ride on the MRT train from the Semantan Station to the Sungai Buloh Station on 26 July 2016.

This is the first time personnel who were not directly involved in the construction of the MRT Project have had the opportunity to ride on the MRT train. The ride covered the entire Phase One section of the MRT Sungai Buloh-Kajang (SBK) Line which became operational in December 2016 this year.

Besides Ali, the other members of the board who were part of the visit were Datuk Che Mokhtar Che Ali, Dato’ Sutinah Sutan, Datuk Dr Ir Abdul Latif Mohd Som and Encik Ahmad Zubir Zahid.

They were accompanied by MRT Corp Chief Executive Officer Dato’ Sri Shahril Mokhtar, MRT Corp SBK Line Project Director Mr Marcus Karakashian and other members of the MRT Corp Leadership Team.

The visitors gathered at the MRT Corp Corporate Headquarters at Bukit Damansara before heading to the Semantan Station nearby to board the train at 9.05am.

The train travelled along the guideway and made stops at all stations along the way as the train would during normal operations.

At the Kwasa Sentral Station, the visitors got off the train and were brought on a walkabout within the station, which already had most of its facilities such as fare gates and ticket vending machines installed.

The MRT train then proceeded to the Sungai Buloh Station where the visitors were shown how the station would seamlessly integrate with the Sungai Buloh KTM Station. At the station, commuters would be able to easily transfer from KTM trains onto MRT trains and vice-versa by using a common concourse.

Karakashian also pointed out the multi-storey park and ride facility which had been constructed at Sungai Buloh which would cater to both KTM and MRT users.

Commenting on the visit, Ali said he was very happy with the progress of the Project. “It’s great to see that the MRT Project has managed to build stations in areas that are densely populated. Not only does the MRT cater to these areas but it also links with other train services such as the KTM.



■ **THUMBS UP:** (from left) Abdul Latif, Shahril, Ali, Sutinah, Zubir and Che Mokhtar giving their mark of approval while riding the MRT train.

“This will enhance the usage of public transportation in the Klang Valley which will benefit the entire population” said Ali.

He added that the public was certainly looking forward to Phase One of the MRT SBK Line operating in December.

THE PRIME MINISTER TESTS MRT TRAINS

By Rizal Redzuan



■ **UNFORGETTABLE EXPERIENCE:** The Prime Minister with his social media friends on the MRT feeder bus. Picture by najibrazak.com

THE close attention that Prime Minister Dato’ Sri Mohd Najib Tun Abdul Razak has given to the Klang Valley MRT Project saw him take several rides on the MRT trains prior to the launch of the MRT Sungai Buloh-Kajang (SBK) Line.

On 1 September 2016, he made a surprise working visit to the SBK Line where he took his first ride on the MRT train.

At the Semantan Station, Najib was greeted by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) Chairman Tan Sri Dr Ali Hamsa, Chief Executive Officer Dato’ Sri Shahril Mokhtar and SBK Line Project Director Mr Marcus Karakashian.

He was then led to the platform level of the station where he proceeded to board the train which brought him to the Phileo Damansara Station. Along the way, the train stopped at the Pusat Bandar Damansara Station just as it would during normal operations.

Upon arrival at the Phileo Damansara Station, Najib walked around the station and was shown the concourse level of the station. He also

inspected the fare gates and ticket vending machines that had already been fitted out.

The Prime Minister also walked to the pedestrian link bridge over the SPRINT Highway, which connects the MRT Station with an entrance adjacent to the Phileo Damansara Commercial Centre.

He also had a look at the construction work which was on-going for the multi-storey park and ride building adjacent to the station.

After completing the walkabout, Najib returned by train to the Semantan Station where the visit ended.

Commenting on the visit on his blog *najibrazak.com* later, the Prime Minister said he was very impressed with what he saw during the visit.

“I cannot wait for the *rakyat* to start using it at the end of this year, God willing,” he said.

Just a week before the official launch of the SBK Line on 9 December 2016, the Prime Minister



■ **SOAKING IN THE MOMENT:** Najib looking out of the MRT train during the first train ride.



■ **TAKING A TOUR:** Najib descends from the platform level as he tours the Phileo Damansara Station.



■ **GOOD VISIT:** Najib (middle) going through the Automatic Fare Gates as he exits the Semantan Station.



■ **FULL SCORE:** Najib (second from left) together with from left Shahril, Ali, Chairman Suruhanjaya Pengangkutan Awam Darat Malaysia Tan Sri Datuk Seri Syed Hamid and Secretary General of Treasury Tan Sri Dr Mohd Irwani Serigar Abdullah giving their mark of approval for the project.

again took a ride on the MRT train to check the system out. This time around, he invited his social media friends to join him on the ride.

The group boarded the train at Mutiara Damansara Station and rode to Pusat Bandar Damansara Station. While exiting the station, the group managed to have a look at one of the MRT feeder buses which was parked at the station’s bus lay-by.

The social media friends who were invited were Puteri Balqish and Rosli Abdul Rahman from *PenMerahdotcom*, Ahmad Nazuwan Amran from *BeautifulNara*, Twitter *@mohon_clash* curator Mohd Nazrinifwat, Mohd Syahir who blogs on economic issues and Khairul Idzwan Kamarudaman who frequently blogs on public transport issues.

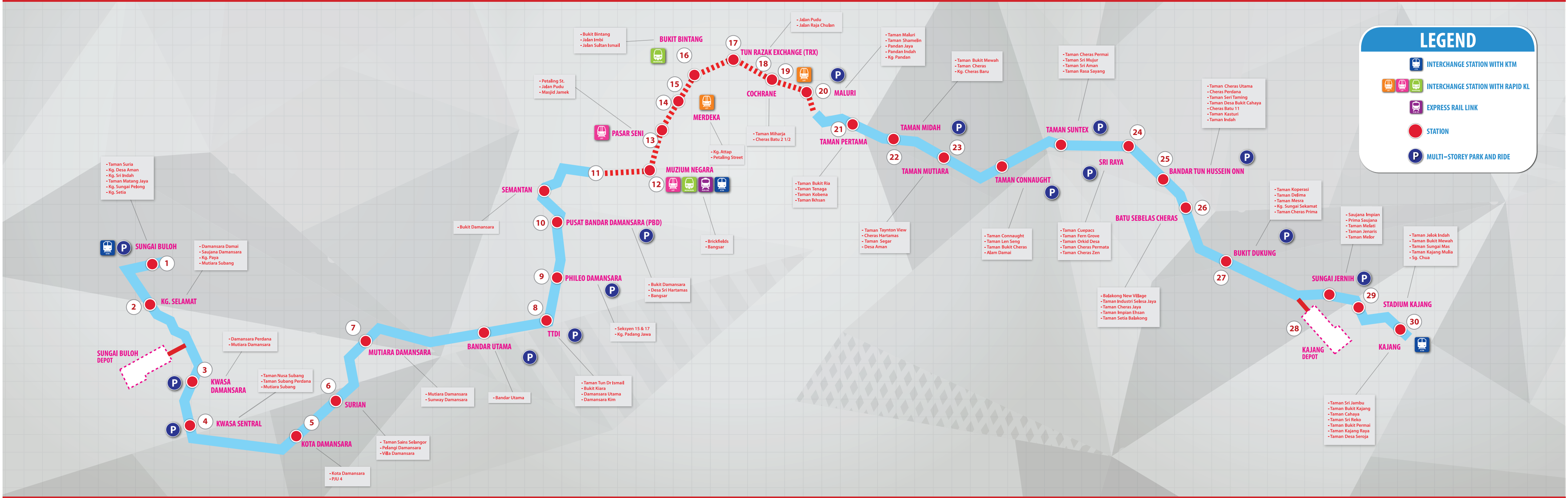
Also present were Mohd Fazreen Jasni from the website *TheVocket*, social activist Kuan Chee Heng, *Vine* producer Lukman Aqid Zulkarnae, *HotFM* presenter Nordin Madian, well-known Instagram photographer Hishammudin Hashim also known as Abeden Mung.

Also invited were Melaka General Hospital specialist Dr Abdul Rahman Abdul Kadir, CFO and author Azmi Arshad, and Dersamynee Subramaniam who is a student and Deputy President of the University of Malaya Students Representative Council.

Writing in his blog *najibrazak.com* after the visit which was entitled “MRT: One more week”, Najib said the group managed to chat informally about the direction of public transport in Malaysia during their ride on the MRT train. “We also touched on the big impact that the MRT would bring to the country as well as to the lifestyle of the people,” he said.

He added that the MRT would improve connectivity and complete the existing public transport system. All this would lead Malaysia towards becoming a high-income nation.

PROJECT UPDATES



1

ALL SET
View of the completed Sungai Buloh MRT Station with the common concourse with the Sungai Buloh KTM Station over the KTM tracks. Also seen is an MRT train undergoing testing.

2

READY
Lay-bys for feeder buses, taxis and private cars to drop-off and pick up commuters at the Kampung Selamat Station.

3

VAST
View of the completed Kwaasa Damansara Station with the at-grade parking facility (right).

4

AMENITIES
The Kwaasa Sentral Station with the bays for buses and taxis located nearby.

5

COMPLETED
The Kota Damansara Station with the completed lay bays for feeder buses, taxis and private cars to drop-off and pick up commuters as well as covered walkways for pedestrians.

6

ALMOST DONE
The pedestrian access to the Surian Station from Sunway Nexis (right) being constructed.

7

COVERED WALKWAY
View of the pedestrian bridges linking to the Mutiara Damansara Station.

8

TAKING SHAPE
Roofing of the station and entrance of the Taman Tun Dr Ismail Station completed.

9

ACCESS DONE
View of the entrance of the Phileo Damansara Station in front of Phileo Damansara Commercial Centre with the link bridge over the SPRINT Highway.

10

ATTRACTIVE
Evening aerial view of the Pusat Bandar Damansara Station.

11

HEADING UNDERGROUND
View of the almost completed entrance at the Semantan Station.

12

SUPPLIES
An MRT locomotive transporting equipment on the train tracks inside the Muzium Negara Station.

13

COMING UP
The linkway between the Pasar Seni MRT Station and the Pasar Seni LRT Station being constructed.

14

UNDERGROUND
Platform doors being installed at the Merdeka Station.

15

TRACK LAID
Track works that have been completed inside the Pudu Launch Shaft, which will become an emergency escape shaft.

16

IN PROGRESS
Construction of Entrance A of the Bukit Bintang Station.

17

FULL SWING
One of the entrance structures of the Tun Razak Exchange Station taking shape.

18

FINISHED
Roofing of the station and entrance of the Escape Shaft No. 3.

19

INSTALLATION IN PROGRESS
Fittings and other equipment such as escalators installed inside the Cochrane Station.

20

ALMOST THERE
View of the concourse level of the Maluri Station.

21

GOOD PROGRESS
View of the almost completed entrance at the Taman Pertama Station.

22

GOOD LINKAGE
View of the Taman Midah Station with its entrances constructed.

23

CONVENIENT
View of the Taman Mutiara Station entrance that is ready.

24

IN PROGRESS
View of the Sri Raya Station having its finishing touches done.

25

ALL SET
Aerial view of the at grade parking at the Bandar Tun Hussein Onn Station.

26

ON-GOING
Entrance of the Batu Sebelas Cheras Station being constructed.

27

BUILDING
The multi-storey park and ride facility for the Bukit Dukung Station being constructed.

28

DEPOT
Aerial view of the completed Kajang Depot.

29

IN-PROGRESS
Ongoing construction works at the Sungai Jernih Station (right) and its multi-storey park and ride building (left).

30

GOOD ACCESS:
The ramp linking the Kajang Station's multi-storey park and ride facility (left) with Jalan Reko (right) is almost completed.

MRT FEEDER BUS AUDITED FOR DISABLED ACCESSIBILITY

By Rizal Redzuan

THE MRT feeder bus underwent an accessibility audit for the disabled in preparation for operations which would happen at the same time as the Phase One operations of the MRT Sungai Buloh-Kajang (SBK) Line in December. The audit took place at the KVMRT Training Centre on 28 September 2016.

The auditors were members of the Transportation Committee for the Disabled. The committee is under the purview of the Ministry of Transport (MOT).

The audit session was a requirement under Section 27 of the Persons with Disabilities Act 2008 which enshrined the rights of people with disabilities to use any public facilities like any abled person.

The audit session commenced at 11.00am with Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) Head of Trackworks and Maintenance Vehicle, Electrical and Mechanical Systems, Encik Zamri Abas providing a brief explanation on the feeder buses.

He said 112 buses would be deployed for Phase One operations of the MRT SBK Line, while a total of 300 buses would be used when the entire line was operational in July 2017. Scania AB and AB Volvo were the manufacturers for the buses.

A short question and answer session was



■ **TESTING OUT:** A committee member of the Transportation Committee for Disabled trying out the wheel-chair ramp of the MRT feeder bus.

conducted with the assistance of Prasarana Malaysia Bhd (Prasarana) MyRapid Bus Manager SBK Line Encik Zakaria Kasim. During the audit, the committee boarded a prototype feeder bus and checked all the features which were provided for the disabled.

Features of the bus for the disabled included a

ramp for wheel chair access, dedicated area for wheel-chaired passengers, and a special button for disabled passengers to alert the bus driver to stop the vehicle.

The committee was generally happy with the features provided. Nevertheless, they provided feedback on areas of improvements.



■ **FIRST HAND EXPERIENCE:** Members of the committee inside the MRT feeder bus.



■ **JOB DONE:** Members of the committee pose after concluding the audit session.

Others present during the audit session were members of the MRT Corp Operational Readiness Third Party Interface Taskforce, and the Operational Readiness Marketing and Commercial Taskforce. Representatives from Scania AB, AB Volvo and Dewan Bandaraya Kuala Lumpur (DBKL) were also present.



■ **READY TO MOVE:** The bus captains in front of their respective buses.

FEEDER BUSES FOR SBK LINE DELIVERED

By Rizal Redzuan

THE date 8 December 2016 will always be remembered in Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) as the first batch of feeder buses for the MRT Sungai Buloh-Kajang (SBK) Line were delivered to the Sungai Buloh Bus Depot.

The 10 feeder buses which were delivered were Volvo buses with their bodies built by SCOMI. In the morning of that day, 10 Rapid Bus Sdn Bhd captains were picked up from the Sungai Buloh Bus Depot in Sungai Buloh and brought to SCOMI's bus factory in Rawang.

At the factory, the captains and all others who were involved in the building of the buses took the opportunity to take photos of the historic moment.

Just before departing, the drivers took their positions in front of their buses, and then simultaneously boarded their vehicles and started their engines. They then drove out of the factory in a convoy.

The convoy entered the North-South Highway at the Sungai Buaya Interchange and proceeded to the Sungai Buloh Interchange before ending their journey at the bus depot just after sunset.

A total of 112 buses would be required to serve the 26 routes for the first phase of the MRT SBK Line which would become operational on 16 December 2016.

SPAD CHECKS ON MRT FEEDER BUS READINESS

By Rizal Redzuan

A DELEGATION from the Land Public Transport Commission (SPAD) conducted a check on 1 December 2016 to assess the readiness of the feeder buses for the MRT Sungai Buloh-Kajang (SBK) Line Phase One operations.

The delegation, which was led by SPAD Chief Executive Officer Encik Azharuddin Mat Sah, was first briefed by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) Head of Feeder Bus and Infrastructure Planning Encik Rudyanto Azhar.

The delegation was told that a total of 112 buses were available to serve 26 routes from 11 of the 12 stations that would start operations on 16 December 2016. The buses were purchased from Scania AB and Volvo AB.

The 11 stations with feeder bus services are Sungai Buloh, Kampung Selamat, Kwasa Sentral, Kota Damansara, Surian, Mutiara Damansara, Bandar Utama, Taman Tun Dr Ismail, Phileo Damansara, Pusat Bandar Damansara and Semantan.

The feeder buses, which can carry 62 passengers each, would be serving residential

and commercial areas located within a 10km radius of the MRT stations.

During the check, two prototype buses had been delivered while the rest were being delivered in stages beginning 8 December 2016.

The media was invited for the exercise. During the check, the delegation together with the media took a ride on the actual feeder bus route No T101 which served Bukit Rahman Putra from the Sungai Buloh MRT Station.

Speaking to the media after the ride, Azharuddin said he was happy with the buses that were used to provide the SBK Line feeder bus service.

“The Government wants the fares to be affordable so that everyone will be able to use public transport. This is why the approved fare for feeder buses is RM1 only,” he said, adding that the frequency of the buses would be a bus every 10 to 15 minutes.

Meanwhile, Rudyanto told the media that



■ **THUMBS UP:** (from left) Azharuddin, Rudyanto and RapidKL Chief Operating Officer Encik Azam Omar with the MRT feeder bus.

between December 2016 and July 2017, a feeder bus service would provide the linkage between the Pusat Bandar Damansara Station and KL Sentral where commuters would be able to connect with other rail-based services such the LRT, KTM Komuter, KLIA Ekspres, KLIA

Transit and the monorail. This was because there would be no direct interchange station between the SBK Line and other rail-based services in the city centre until Phase Two operations began in July 2017.

READY FOR THE MRT RETAIL EXPERIENCE

By Amalina Ghazali

AS the MRT Sungai Buloh-Kajang Line neared completion, Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) held a simple event to welcome the 15 companies that were successful in bidding for retail spaces at 21 MRT elevated stations.

The event took place at the MRT Information Centre in Seri Kembangan on 20 October 2016 where the 15 retailers were introduced to the media.

During the event, the retailers were presented with copies of the Retailers' Handbook. The Handbook contained details on the fitting out process as well as the dos and don'ts while operating at the MRT stations.

In his speech during the event, MRT Corp Director of Commercial and Land Management Dato' Haris Fadzilah Hassan said the companies were selected based on a mix of trade that would be suitable to be operated at an MRT station.

Also, MRT Corp wanted the businesses to complement each other rather than compete against one another.

“One of the factors is to ensure that the brands working with MRT Corp are strong brands that

would be able to cater to the fast-paced mobility and urban lifestyle of the commuters in the Klang Valley,” he said.

The 15 companies that won their bids for the retail spaces were among 49 companies that submitted a total of 223 applications in April 2016. One retailer however later declined the offer, resulting a total of 14 retailers ultimately coming on board.

In furthering the government's Bumiputera Agenda, MRT Corp had targeted at least 30% of the retail space units to be awarded to Bumiputera entrepreneurs. This target was exceeded when 50% of the total were won by Bumiputera entrepreneurs.

One of the Bumiputera outlets will be operated by a company that is owned and run by the disabled, with the assistance of Majlis Amanah Rakyat (MARA).

The next round would see retail spaces for the underground MRT stations being tendered. MRT Corp also planned to expand the MRT Retail Experience to include kiosks and push carts at various locations within the MRT Station.



■ **READY FOR BUSINESS:** Representatives of the successful retailers holding up their brands.

EMERGENCY RESPONSE DRILL AT MRT STATION

By Amalina Ghazali



■ **HELP NEEDED:** Commuters who sustained injuries were carried out of the train using stretchers to be treated by the medical team.

AN Emergency Response Drill was carried out for the MRT Sungai Buloh-Kajang (SBK) Line at the Kwasa Sentral Station on 26 October 2016 to prepare for operations of the line.

The drill was organised by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) and Rapid Rail Sdn Bhd (Rapid Rail), the operator of the SBK Line, and involved various emergency response agencies such as the Fire and Rescue Services, Police and the Ministry of Health (MOH).

The drill, which is part of an Emergency Response Plan, is a mandatory requirement by the Land Public Transport Commission (SPAD) before an operating license is to be issued for a railway.

Prior to the execution of the drill, the various agencies together with the operations and safety team of the SBK Line had worked out a detailed plan on the execution of the Emergency Response Plan.

This included a familiarisation visit to the Sungai Buloh MRT Depot several weeks before the actual drill. During the visit, they were given a

background briefing on the MRT Project and taken on a tour around the depot.

A familiarisation visit to the Kwasa Sentral Station was also held a few weeks before the stipulated date, allowing the various agencies to map out the route for the emergency response. The planning allowed the different parties to strategise and coordinate their plans which would be carried out during the actual day.

On the actual day, the emergency simulation depicted a “derailment” of the MRT train after it hit an object on the track just 200 meters after departing from the Kwasa Sentral Station.

The derailment triggered multiple alarms which alerted the Operations Control Centre (OCC).

Staff members nearest to the incident area were deployed to verify the incident and execute the emergency response.

The drill involved around 280 passengers who were “trapped” on board, with some “injured”. One of the passengers inside the train had triggered the emergency by activating the



■ **ORDERLY:** The medical team at the triage area to assess the injuries of the passengers.



■ **RESCUE:** Fire and Rescue Services, Civil Defense and Police taking control of the situation while rescuing the “victims”.



■ **KEEPING TRACK:** Fire and Rescue Service personnel kept a tally of the injured passengers.



■ **EVACUATION:** Commuters were ushered out of the train after the track was de-energised.

Passenger Emergency Call (PEC) button inside the train.

The OCC immediately shut down the power supply to the section of the track to enable rescue operations to take place safely.

The Fire and Rescue Services team at the scene was briefed on the incident and safety precaution by the MRT SBK Line's Silver Incident Officer (SIO) before proceeding to the derailed train.

The Fire and Rescue Services team had to carry the “injured victims” out of the derailed train along the walkway back to the station concourse while making sure that the other “victims” were also safely guided out of the derailed train.

At the same time, a police team had set up their Emergency Action Control Post at the station lay-by area and cordoned off the station to prevent bystanders from interfering.

Meanwhile, the MOH team had set up their medical triage at the station concourse and street level to attend to the injured passengers.

Those who needed further medical attention were sent to hospital by ambulance.

With the drill being carried out, both the Emergency Response Agencies and Rapid Rail were able to validate their respective Emergency Response Plans and Procedures which they had drawn up to manage disasters.

There were also opportunities to improve shortcomings faced during the drill.

Rapid Rail Head of Operations MRT SBK Line Tuan Haji Azmi Mohd Zain said that the exercise went according to plan with all the parties involved performing their roles very well.

“The various agencies have meticulously planned the exercise after several meetings and familiarisation visits to the stations, tracks and depot. This resulted in the exercise running very smoothly. A post-mortem on the drill was later held to identify area that could be improved further.”

TOURISM AND CULTURE MINISTER VISITS MUZIUM NEGARA STATION

By Rizal Redzuan



■ **INFORMATION:** Karakashian (right) with Nazri (second from right) at the platform level of the Muzium Negara Station.

TOURISM and Culture Minister Dato' Seri Mohamed Nazri Abdul Aziz visited the Muzium Negara Station on 10 October 2016.

The purpose of his visit was to gain further knowledge about the progress of the Klang Valley MRT Project and the station, which is located in front of Muzium Negara.

Nazri was received by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) Chief Executive Officer Dato' Sri Shahril Mokhtar at the site.

Also present were Project Director MRT Sungai Buloh-Kajang (SBK) Line Mr Marcus Karakashian, MRT Corp Strategic Communications and Stakeholder Relations Director Dato' Najmuddin Abdullah and MMC Gamuda KVMRT (T) Sdn Bhd Project Director Mr Satpal Bhogal.

After a short safety briefing, Karakashian led Nazri on a walkabout of the station site where he explained the various features of the station.

He pointed out that when completed, there would be a lift from the concourse level of the station that would go directly to the front of the national museum.

"MRT users will also be able to walk to KL Sentral via an underground walkway that links the MRT station and KL Sentral," Karakashian said.

Nazri said, "he was delighted with the progress of the project. "I see it as potential game-changer in the public transport development," he said.

The Muzium Negara Station is scheduled to be opened in July 2017 under Phase Two operations of the SBK Line.

MRT CORP ORGANISES MONTH-LONG ENVIRONMENTAL AWARENESS CAMPAIGN

By Rizal Redzuan

MASS Rapid Transit Corporation Sdn Bhd (MRT Corp) organised a month-long MRT Environmental Awareness Campaign aimed at promoting environmentally friendly practices at MRT Project work sites as well within the community at large.

The campaign was launched at the KVMRT Training Centre in Sungai Buloh on 4 October 2016 by Deputy Minister of Natural Resources and Environment Datuk Ir Hamim Samuri. Among the programmes held during the campaign was the Environmental Management Conference 2016.

The day-long conference which was held at the training centre aimed to educate the MRT Project Work Package Contractors, Project Delivery Partner (PDP) and representatives from the community on the requirements of the MRT Corp's Detailed Environmental Impact Assessment.

Another topic was on electronic waste (e-waste) management and disposal, where proper disposal of e-waste was discussed.

As part of the campaign, an MRT E-Waste Competition was launched. Twelve communities

along the MRT Sungai Buloh-Kajang (SBK) Line alignment were selected to take part in this competition and were provided with bins for them to collect e-waste.

The community that had the highest collection of e-waste over a three-week period received a RM2,000.00 grand prize.

The Bandar Utama 4 community emerged winner of the competition when the community collected a total of 611 kg of e-waste.

Minister of Federal Territories Datuk Seri Tengku Adnan Tengku Mansor presented the winner, represented by Mr Chow Yew Nam, with a RM2,000.00 cheque during the National Environmental Day 2016 festivities on 22 October 2016, held at Putrajaya Water Recreational Centre.

During the event, 13 MRT Corp employees also participated in the Eco Fun Walk 2016.

Other activities included a drawing competition for primary school students aged between 10 and 12 years old which was organised by the PDP.



■ **LAUNCHED:** Hamim (fourth from left) and MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar with representatives of communities along the SBK Line at the launch of the MRT Environmental Awareness Campaign.



■ **PROPER DISPOSAL:** Hamim having a look at some examples of e-waste being exhibited during the campaign launch.



■ **KNOWLEDGE:** The MRT Environmental Management Conference was held as part of the campaign.



■ **VICTORIOUS:** Chow (in checkered shirt) accepting a mock cheque from Adnan (fifth from right) during the National Environmental Day 2016 celebrations for winning the MRT E-Waste Competition.

HAPPENINGS



■ **VIP VISITOR:** Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak visiting the MRT Corp booth at the Land Public Transport Symposium on 17 October 2016.



■ **COURTESY VISIT:** MRT Corp CEO Dato' Sri Shahril Mokhtar (right) presenting Malaysian Anti-Corruption Commission Chief Commissioner Datuk Dzulkifli Ahmad with a memento after a courtesy visit to the MACC Headquarters on 20 October 2016.



■ **INFORMED:** Serdang Member of Parliament Dr Ong Kian Ming addressing the media during the media briefing session on the MRT Sungai Buloh-Serdang-Putrajaya Line at the Seri Kembangan MRT Information Centre on 4 July 2016.



■ **FOREIGN MISSION:** A delegation from the United Kingdom ASEAN Business Council visited the MRT Project on 27 October 2016 during their trip to Malaysia.



■ **HONoured:** MRT Corp won the Silver Award for the Employer of Choice in the 16th Malaysia HR Awards 2016 on 27 October 2016. Receiving the award from Deputy Minister of Education I Dato' P Kamalanathan (left) was MRT Corp Director of Strategic Human Resources Encik Zainudin Ismail (middle).



■ **DISTINCTION:** MRT Corp was awarded the Certificate of Excellence for the GLC category by the Malay Contractors Association of Malaysia on 4 November 2016. Receiving the certificate was Encik Zairil Zainul, Head of the Bumiputera Relations Department of MRT Corp (third from left).



■ **KIND GESTURE:** MRT Corp Strategic Communications and Stakeholder Relations Director Dato' Najmuddin Abdullah presenting a contribution to Tabika Kemas Sri Damansara on 9 October 2016.



■ **HAPPY:** Engineers from the Permanent Way Institution, Malaysia pose for a group photo after their visit to the Sungai Buloh Depot on 9 August 2016.

COLLABORATIONS TO BOOST MRT CORP'S BUMIPUTERA AGENDA

By Rizal Redzuan



■ **SEALED:** Shahril (right) and Zamree (left) exchanging documents after signing the Memorandum of Understanding between MRT Corp and CGC. Witnessing the signing were Mustapa (second from right) and Natt.



■ **FUTURE ENTREPRENEURS:** Group photo of the participants of the MRT Young Entrepreneurs Programme II, who were being trained to become Bumiputera contractors, were also present at the signing.



■ **WORDS OF ENCOURAGEMENT:** Mustapa delivering his speech during the signing ceremony which included advice to the participants of the MRT Young Entrepreneurs Programme II.



■ **PARTNERSHIP:** Shahril (right) and Ibrahim exchange documents after signing the MoU between MRT Corp and MARA.

A MEMORANDUM of Understanding (MoU) was signed to establish cooperation between Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) and Credit Guarantee Corporation Malaysia Berhad (CGC) for the provision of financing to eligible Bumiputera sub-contractors involved with the MRT Sungai Buloh-Serdang-Putrajaya (SSP) Line.

The collaboration between MRT Corp and CGC would pave the way for Bumiputera sub-contractors to secure financing to undertake contract works for the SSP Line.

The signing was held at Lanai Kijang, Kuala Lumpur on 12 August 2016.

The Bumiputera Entrepreneur Project Fund (Tabung Project Usahawan Bumiputera-i) (TPUB-i) by CGC provides financing to Bumiputera contractors which are awarded contracts by the Government or Government-linked companies.

The MoU was signed by MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar and CGC President/ Chief Executive Officer Encik Mohd Zamree Mohd Ishak.

Witnessing this signing ceremony were Minister of International Trade and Industry Dato' Sri

Mustapa Mohamed and CGC Chairman Dato' Agil Natt.

This would be the second collaboration between MRT Corp and CGC. Previously, CGC was also the preferred partner for financial assistance for Grade G1 to G4 Bumiputera contractors involved in the MRT Sungai Buloh-Kajang (SBK) Line.

Shahril said that CGC's financing product for Bumiputera contractors was extremely important towards ensuring the success of MRT Corp's Bumiputera Agenda.

Meanwhile, on 20 October 2016, MRT Corp signed an MoU with Majlis Amanah Rakyat (MARA) to form a collaboration focusing on entrepreneurship, education and investment for Bumiputera retailers at MRT stations.

The two parties signed the MoU at MRT Corp's Corporate Headquarters. The signatories were Shahril and MARA Director General Datuk Ibrahim Ahmad.

The collaboration will cover education and training programmes at MARA Education Institutions which would be tailored to the needs for who were going to venture into retail at the MRT stations.

MORE FORMER SQUATTERS GET PAYMENTS

By Puteri Nur Atika Dayana Khiruddin and Wallace Soh Chun Hwei

MASS Rapid Transit Corporation Sdn Bhd (MRT Corp) organised a second round of visits to hand over ex-gratia payments to former squatter households on 22 November 2016 at the Kampung Muihbbah People's Housing Project Complex (PPR) in Bukit Jalil.

The session was led by MRT Corp Strategic Communications and Stakeholder Relations Director Dato' Najmuddin Abdullah.

He was accompanied by staff members from both MRT Corp and MMC-Gamuda KVMRT (PDP SSP) Sdn Bhd, as well as Kuala Lumpur City Hall (DBKL) led by its Enforcement Department Inspector Encik Mohd Shamsi Mohamad.

Each of the 35 qualified households at the PPR was entitled to RM2,000 ex-gratia payment from MRT Corp. Another 14 cheques would be paid to qualified households who have now moved to PPR Wahyu, PPR Beringin and PPR Raya Permai. The squatters were previously living in Jalan Kuari, Pekan Sungai Besi, Kampung Batu Delima and Jalan Segambut Atas.

The cheque presentation was similar to one carried out on 24 and 25 May 2016 at PPR Intan Baiduri, Kepong and PPR Pinggiran Bukit Jalil

respectively following an exercise to relocate squatter settlements which were in the way of the MRT Project.

Just like in that previous exercise, MRT Corp and PDP had worked closely with DBKL to have these squatters relocated to the PPRs.

"It is always good to be on the ground to meet these former squatter households and hand over the cheques to them. I forward my gratitude to them for the cooperation given," said Najmuddin.

When receiving the cheques, the former squatters could not hide their happiness as the money could be used to buy the necessities or to do some minor renovations.

"It is like winning a lottery when we received the cheque at home, personally delivered by MRT Corp's Director," said one of the former squatters. Najmuddin was also grateful to the DBKL officers who had accompanied MRT Corp on these occasions to deliver the cheques.

Recipients who were not at home during the visit were left with a notice so that they could be in touch with MRT Corp for cheque collection.



■ Encik Mohd Yuzif Yahya (left) receiving the ex-gratia cheque from Najmuddin (right).



■ Najmuddin (centre) handing over an ex-gratia cheque to Mr Low Siew Tock (left) at PPR Kampung Muihbbah. Witnessing the handover is Shamsi.



■ MRT Corp Stakeholder Relations Senior Executive Suzy Kubong (right) verifying the status of a former squatter household before the release of the cheque by Najmuddin (centre).

STAKEHOLDER ENGAGEMENT IN FULL SWING FOR SSP LINE

By Fakhruddin Mohammad and Wallace Soh Chun Hwei

THROUGHOUT 2016, Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) continued to implement its standard practice of conducting engagement sessions with stakeholders along the MRT Sungai Buloh-Serdang-Putrajaya (SSP) Line who were impacted by construction works.

Throughout the year, more than 150 engagement sessions were held prior to the commencement of the construction works. The stakeholders included residents, resident associations, businesses, traders and other groups living or operating near MRT worksites, which were gradually being set up by the MRT Project Work Package Contractors (WPC).

These sessions were carried out even before the official launch of the MRT SSP Line by the Prime Minister of Malaysia, Dato' Sri Mohd Najib Tun Abdul Razak, on 15 September 2016.

Earlier prior to the appointment of the WPCs, MRT Corp and its Project Delivery Partner for SSP Line, MMC Gamuda KVMRT (PDP SSP) Sdn Bhd, had conducted engagement sessions focusing mainly on land acquisition issues.

When the WPCs were on board, the focus of stakeholder engagement switched to construction issues.

During these sessions, information about construction activities which would be taking place were provided. Concerns raised by the stakeholders, such as on traffic congestion, safety and security, and environmental impact were also addressed.

"Based on what we learned from the MRT Sungai Buloh-Kajang (SBK) Line, stakeholder engagement prior to commence of construction works was able to help address issues and concerns raised by various stakeholders," said

MRT Corp Strategic Communications and Stakeholder Relations Director Dato' Najmuddin Abdullah.

He added that this practice helped mitigate concerns and complaints raised, allowing construction activities to be carried out smoothly.

The WPCs for both the northern and southern elevated sections of the SSP Line which had carried out stakeholder engagement sessions were Sunway Construction Sdn Bhd for package V201, Ahmad Zaki Sdn Bhd for package V202, IJM Construction Sdn Bhd for package V203 and Malaysian Resources Corporation Berhad for package V210.

MMC-Gamuda KVMRT (T) Sdn Bhd, the contractor for underground works, had also kick started a series of engagement sessions.



■ **HITTING THE GROUND:** Najmuddin (left) with key representatives of Sri Maha Kali Amman Hindu Temple, Sri Serdang, during a site visit conducted on 9 June 2016.



■ **TOWNHALL SESSION:** IJM Construction Project Manager Chew Wey Siang (standing) presenting to commercial and residential stakeholders from Jinjang during an engagement session on 9 August 2016.

CONSTRUCTION OF THE SSP LINE OFFICIALLY BEGINS

By Amalina Ghazali



■ **THE LAUNCH:** Najib (middle left) pushing the lever, giving the go-ahead for a bored piling machine to perform the ground breaking for the project. With him are (from left) Adnan, Abdul Rahman, Liow, Shahril and Ali.

CONSTRUCTION work for the MRT Sungai Buloh-Serdang-Putrajaya (SSP) Line was officially launched by Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak during a ground breaking ceremony at Putrajaya Sentral on 15 September 2016.

The ceremony was attended by over 300 people.

The location of the ceremony was at an actual MRT work site near the future Putrajaya Sentral MRT Station, which is the southern end of the SSP Line.

Besides the Prime Minister, others who were present at the event were Minister of Transport Dato' Sri Liow Tiong Lai; Minister of Urban Wellbeing, Housing and Local Government Dato' Haji Abdul Rahman Dahlan; Minister of the Federal Territories Datuk Seri Tengku Adnan Tengku Mansor and Land Public Transport

Commission (SPAD) Chairman Tan Sri Dato' Seri Dr Syed Hamid Albar.

Receiving the guests were MRT Corp Chairman Tan Sri Dr Ali Hamsa who is also the Chief Secretary to the Government and MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar.

In his speech during the event, the Prime Minister said it was an achievement that the Government was able to develop the second MRT Line within five years of launching the first line, the MRT Sungai Buloh-Kajang (SBK) Line.

He said the Government would continue focusing on developing public transport infrastructure as it would benefit the *rakyat*.

"The Government had earlier not focused enough on the development of public transport. This lack of focus has unfortunately led to us suffering



■ **INTERESTING:** Najib looking at the progress of the MRT Project being displayed at the MRT Walkway Gallery, accompanied by Shahril.



■ **AN ACHIEVEMENT:** : Najib giving a speech at the MRT SSP Line Ground Breaking Ceremony that marks the commencement of construction works for SSP Line.

some of the consequences today, with traffic congestion not only in the Klang Valley but in many cities and even highways outside this area," he said.

The Prime Minister also congratulated all parties involved in the development of the SBK Line for being able to deliver the project on time and within the target cost.

To carry out the ground breaking ceremony, the Prime Minister stood on stage and helped bored piling machine operator Encik Kamarudin Teh put a safety vest and helmet on. Kamarudin then proceeded to the bored piling machine.

The Prime Minister then pulled a lever at a console on stage, and this action gave the go-ahead to Kamarudin to start boring work, symbolising the ground breaking for the SSP Line.



■ **ALL THE BEST:** (from left) Shahril, Ali, Liow, Najib, Adnan, Abdul Rahman, and Syed Hamid giving the thumbs up for the project.



■ **SAFETY FIRST:** Najib helping Kamarudin put on his personal protection gear before the latter proceed to the bored piling machine to carry out the ground breaking.

After a few minutes boring the ground, Kamarudin stopped the machine and the Prime Minister together with the Ministers then inspected and took pictures with the bored piling machine.

The Prime Minister then proceeded back to the stage where he was presented with a memento. The event ended with refreshments being served.

The 52.2km SSP Line will stretch from Sungai Buloh to Putrajaya and will have 37 stations including two provisional stations.

Phase One between Sungai Buloh and Kampung Batu is expected to be operational by the second quarter of 2021, while the entire line is expected to be operational by the second quarter of 2022.

REFURBISHED TBMS FOR MRT SSP LINE READY

By Rizal Redzuan

THE first tunnel boring machine (TBM) to be used for the MRT Sungai Buloh-Serdang-Putrajaya (SSP) Line is ready for action following the completion of its refurbishment in August this year.

The refurbishment was carried out at the TBM Refurbishment Plant at Waiko Engineering Sdn Bhd in Pusing, Perak. This is the first time ever that TBM refurbishment was done in Malaysia.

A Factory Acceptance Test (FAT) was conducted for about a week ending on 11 August 2016, marking the successful completion of the refurbishment. Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) and SSP Line Underground Works Contractor MMC Gamuda KVMRT (T) Sdn Bhd (MGKT) brought the media to the factory to witness the FAT.

Upon arrival at the plant, MRT Corp Underground Tunnel Director Mr Blaise Pearce gave an explanation on the function of a TBM in the construction of the SSP Line's underground alignment.

He also briefly explained why it was good that TBM refurbishment could be done in Malaysia, and how the SSP Line could benefit from this in terms of cost.

"With the refurbishment of the TBMs, a total of RM460 million could be saved from the overall cost of the MRT Project," he said, adding that MGKT would be spending over RM 100 million on the refurbishment of a total of eight TBMs.

The visitors were then led on a walkabout in the plant where Pearce explained the basic steps which were carried out during the refurbishment process.

The plant at Waiko Engineering was set up in 2015 as one of the initiatives of the MRT Project Offset Programme. This programme provided the platform for the development of high technology in Malaysia through cooperation with foreign contractors or suppliers.

Senior engineers from MGKT were supervised by experts from world-renowned TBM manufacturer, Herrenknecht AG of Germany, which provided the expertise for technology transfer.

The refurbishment process would see 70% of the parts used being locally manufactured and almost RM50 million worth of local parts being procured from the local supply chain.



■ **THE TEAM:** The personnel involved in the refurbishment of tunnel boring machines at the plant in Waiko Engineering, Perak.